

Importance Of Grading Eggs and How It Is Done Properly

EGGS vary in size, shape, color, hardness, flavor and age. Some of these characteristics we can learn only after breaking the egg, but there are others, such as size, color, cleanliness of shell and freedom from cracks that are readily seen. The age, too, can be determined, by the experienced tester, to a fair degree of accuracy by holding the eggs up to a light. The size of the air chamber in the egg is not always a certain indication of its age. In the winter time, for instance, the evaporation of moisture is so much less than in the summer that the air chamber may be quite larger than the normal even after several weeks.

Eggs Difficult to Grade.
The August number of Poultry Success gives a detailed account of factors relating to the egg trade in the United States. It is stated that eggs are among the most difficult of food products to grade, and that in spite of the tremendous increase in poultry production, the supply has not kept pace with the demand. Eggs differ from other food products in that all changes that occur in their condition from the time of laying are held in disfavor by consumers. Instead of referring to the changes, as in other foods, as fermented, cured, or ripened, it is customary to apply such terms as stale, soured, decomposed, decayed, or rotten. Freshness in an egg does not always mean a desirable quality. In fact, an egg has laid 48 hours in a warm shock during a warm summer rain may be alive with bacteria, while another egg kept eight months in cold storage may be of much better quality.

Candling or Testing Process.
Candling, or testing, eggs is learned after much experience in handling them and breaking many to learn the relation between the internal condition and external appearance. The composition of eggs is fairly uniform, therefore, for food purposes all fresh eggs are practically equal. The yolk varies in color with the food, becoming more yellow when green foods are given to hens. When the hen eats unusual quantities of green foods the yolks may acquire a greenish brown tint and appear dark when tested. They are called "grass" eggs and are perfectly wholesome.

Feed Gives Flavor.
The flavor and odor of eggs, as every one knows, is influenced by feed given the hen. Such things as onions and garlic being particularly noticeable. The difference that exists in the quality of the white and the ability to "stand up" in spring and summer eggs is noticeable enough in commercial eggs, but is due chiefly to external factors acting upon them after laying. Blood close broken yolks, or bacterial contamination are other peculiarities that may exist in eggs at the time of laying. Detached portions of the lining membrane are known as tape worms of eggs. Liver spots or meat spots are detached folds from the wall of the oviduct.

Minerals Strengthen Shell.
The strength of the shell is important, for it may result in breakage and loss. It is not easily remedied, but can be reduced to a minimum by feeding sufficient mineral matter and discarding the offending hens. The color of egg shells is in reality not so important as poultry papers make it appear. Large bennies in the neighborhood of Boston, New York and San Francisco producing eggs of the favored color, probably are responsible for these trade fancies. Uniformity of color pleases the eye and, even in the cities mentioned it is only the wealthy trade that considers the color in buying.

Classifying Dirty Eggs.
Dirty eggs are usually grouped into three classes: (a) plain dirties, those to which soil or dung adheres; (b) stained eggs, those soiled by contact with damp straw or other material; (c) smeared eggs, those covered with a fifth of broken eggs. The farmer is to blame for the first two classes; the third is acquired all along from nest to consumer. Rainy weather increases the proportion of dirty eggs. The "dirties" constitute about 5 percent of all eggs and are sold at a loss of at least 20 percent.

Cracked Eggs.
The trade name for cracked eggs is

"chicks." Blind chicks are those that are not readily seen, but are detected with the tester or by clicking the eggs together. In "chicks" the egg shell is pushed in without rupturing the shell membrane. "Leakers" not only lose part of their contents but produce smeared eggs. A fair estimate of broken eggs from hen to market is 8 percent, and the depreciation in value about 25 percent.

Grouping Heated Eggs.
Heated eggs are fertile eggs that have not been kept below a temperature of 70 degrees Fahrenheit. Commercially they are grouped as follows:

1. No heat shown, cannot be distinguished from fresh eggs with the tester.
2. Light floats, the first grade that can be separated by the tester and corresponds to 18 to 24 hours of incubation; not objectionable to the average housewife.
3. Heavy floats, an exaggeration of the preceding features; the yolk white and seamy and objectionable.
4. Blood rings blood has developed.
5. Chicks visible to the candle.

The loss from heated eggs in the middle west is approximately at one-fourth the original value; in the east it is less and greater in the south. The responsibility is divided between the farmer on one side and the rural buyer and freight handler on the other.

Rough Handling Damaging.
Held or shrunken eggs are due to the escape of moisture through the porous egg shell. It is greatest in warm weather, dry air, currents of air. The result is that the contents of the egg shrink and the air cell increases in size. Rough handling may split the membrane down the side of the egg and give the air chamber a larger appearance, consequently, to measure the size of the egg by the size of the cell is deceptive. Rough handling will also rupture the inner membrane allowing air to mix with the contents of the shell, producing what is known as watery or frothy egg. It is in the fall that the shrunken egg is most common when the rising prices tempt farmers and grocer to hold their stock.

Bacteria in Rotten Eggs.
A rotten egg contains a growth of bacteria that makes it unfit for food. When laid, the egg is usually germ free and will remain so if properly cared for. Although the shell is not germ proof, the membrane beneath the shell is as long as it remains dry. As soon as an egg becomes damp or broken or warm enough, the bacteria begin to develop. The following three groups of bacterially infected eggs are recognized:

1. Black rots. It is caused by many different species of bacteria which produce hydrogen sulphide gas, blackening the contents and resulting in the characteristic odor and sometimes causing the well known explosion.
2. Sour eggs or white rots. These eggs have a sour odor. The contents are watery, the yolk and white mixed and offensive to eye and nose.
3. The spot rot. The entire egg is not contaminated in this group, but the bacterial growth has remained near the point of entrance. The tester readily discloses these, and when broken, lumpy adhesions are found on the inside of the shell which are of various colors and shapes.

The responsibility for decayed eggs is divided between the farmer who allows hens to lay in the weeds or under the barn and the dealer who holds the eggs in damp cellars or poor storage rooms.

Wetting Causes Moulding.
Mouldy or muddy eggs are due to accidental wetting or storage in damp cellars or ice houses. The spot rot is often found in muddy eggs, but the muddy egg is free from organism, though tainted by the odor of mouldy growth upon the egg shell or the packing materials.

The absorption of odors is of course baffling to the egg tester, or candler. Held stock of the fall season often is badly flavored by being stored with citrus fruit, vegetables, fish, cheese, or in musty cellars.

The loss from handling eggs is seen to be very great. By using improved methods, the farmers and dealers would secure an increased gain and the consumer a superior and more uniform grade of eggs.

Dry Farming Near El Paso



Scenes on farm of J. E. Reeves, 2 1/2 miles north of El Paso; no irrigation.

Forage Plants For West Texas

By J. L. Quicksall, Special Demonstrator U. S. Agricultural Department

THE subject of growing forage plants for west Texas is a very important one. There are perhaps a great number of plants that might be considered as good forage plants, such as sweet sorghum, kafir, milo, emmer (often called speltz), cow peas, alfalfa, burr clover, etc. The most important of these for dry land farming, or I might say for growing without irrigation and with light rainfall, are perhaps milo, kafir and emmer, and I shall confine my discussion to these.

Preparing the Soil.
The first thing to do in growing any crop is the preparation of a good seed bed, which can be done by deep plowing or breaking, which should be done early in the fall by breaking preferably with a disc plow or a mould board plow, following immediately with a disc or tooth harrow, or both, in order to pulverize the clods and make the soil fine. It may then be necessary to run over the land with a heavy drag, or steel roller in order to firm down the seed bed.

I think as much care should be used in preparing the seed bed for forage crops as would be expected for growing a good crop of corn. The deeper plowing the better, if done at the proper time. If the seed bed has been prepared, as above indicated, the soil should be in the best condition possible for holding all the moisture possible.

To Prevent Loss of Moisture.
If sufficient rain should come through the winter to wet down this seed bed and form a soil crust the seed tooth harrow should be used as soon as the land is dry enough to work, so that evaporation and loss of moisture will be prevented. Continue this harrowing and surface cultivation after each rain. If no rain falls, do a little of the winter cultivation anyway, so as to save and conserve the moisture you have in the soil below, and leave the soil in the best possible

condition to receive and store away moisture when the rain does come. From my observation and information in regard to the condition in southwest Texas with an average rainfall of more than 15 inches, the farmer, by the use of intelligent methods, can guarantee himself a fair crop of either the milo, kafir, or emmer.

Milo Is Surest.
Perhaps the surest crop of these would be the milo. It was first known as yellow milo make. Many other names have been applied to milo, such as dwarf yellow milo, red Egyptian corn, milo make, etc. Milos should never be used, for it confuses the crop with corn. What is commonly sold as dwarf milo is grown on the plains of Texas, Oklahoma and Kansas, where it reaches a height of four to five and one-half feet. I visited a field of this sort last September at Chillicothe, Texas, which had been planted from selected seed. This was practically all the same height and promised a large yield, while just across the public road on the same sort of land was a field that was planted from the same variety, but had not been selected. This was very uneven in height, some stalks four feet and some seven feet high.

Plant Only Best Seed.
I would urge the importance of planting only the best seed to be had in order to secure the best results. Breed up your own seed on your own farm by planting a small seed patch and selecting the best individual plants to plant on this seed patch with erect heads standing up straight on stalks that did not sucker, nor the heads turn down, or goose-neck of uniform height, etc. The following points might be used to advantage in seed selection: First, earliest; second, drought resistance; third, productive; fourth, uniform height; at maturity; fifth, freedom from branches and suckers and erect heads.

Go in the field and select the best stalks and mark them by tying a string or ribbon just below the head. The head should be left on the stalk till fully ripe, then gathered and put in a safe place till planting time. Forty or fifty heads will be sufficient to plant an acre.

How to Plant.
After gathering of first test, then plant in drills about three feet apart, running the rows diagonally across the way the prevailing winds blow if possible. Plant a little below the surface, plant from four to eight pounds of seed per acre. Thin sowing makes larger stalks and larger heads, but fewer of them.

The cultivation of milo is much the same as for corn. The harrow, or weeder should be used freely at first, running with the rows, so as not to injure the young plants. The cultivation will kill the weed and grass and form a soil mulch which will aid in holding the moisture. When the plants get larger, an ordinary cultivator with sweeps may be used.

Thinning and Harvesting.
Shallow tillage is best, for it will not injure the root and will keep the surface in fine tilth, thus conserving moisture, the one thing needed. Continue this cultivation till near maturity, or till the plants begin to show their heads.

Milo may be harvested by any method as soon as ripe, either by a row header attached to the wagon bed, corn harvester, or cut by hand. The threshing can be done with an ordinary grain separator. The yields have run from 20 to 55 bushels per acre at Amarillo, Texas, as reported by the farmers. Milos is a very fine feed for nearly all kinds of livestock. It can be fed as threshed grain, in the head, or bundle. It is used largely for chicken feed in corn crops, etc.

Kafir Corn.
All that I have said in regard to milo will apply to kafir. If you want to feed it in the bundle, perhaps the kafir is a better forage plant than the milo, but it is not quite so drought

Dry Farming Will Reclaim West Texas

By Hon. Ed. R. Kone, Agricultural Commissioner for Texas.

The first movements of a train leaving a station and of a ship going from the docks are slow, but they quickly become faster, until the train is speeding across the continent more fleetly than the wind, and the vessel is plowing its way across the ocean like a greyhound coursing across a plain.

This is also true with regard to the powerful, well-planned undertakings as the Texas Dry Farming congress has inaugurated. There has been considerable advance made in it since the meeting at Amarillo last year. It is becoming more rapid, and by the time the third annual congress is held, it will be going forward under a full head of steam and the time will be clearly discernible and near at hand when the dry farming movement will be a successful and permanent one in this state, and it is a source of pride to me, as a Texan, to know that the Texas Dry Farming congress is measuring up to the responsibilities assumed and the golden opportunities they involve.

True Promoters.
This will mean a great deal for Texas and the world, as the demand for more homes and food keep even pace with the increase of population and steady rise of the standard of living. It is no small privilege to be prime factors in the inception and conducting of a successful movement of such a movement in such a state, and it is a source of pride to me, as a Texan, to know that the Texas Dry Farming congress is measuring up to the responsibilities assumed and the golden opportunities they involve.

Soil, Rainfall and Climate.
In view of its history and status in other states, I have not the slightest doubt of the success of dry farming in Texas, that more land in the semi-arid portion of Texas can be made to yield profitable crops by its means than in any other state, and also that the application of the same system of conserving moisture in the soil to the lands in the humid regions of Texas will enable farmers to raise as good crops there in years of so-called drought as in those in which rainfall is more abundant or better distributed.

The accomplishment, which in my opinion is of value fully equal to that of bringing successfully under the plow the millions of acres of fertile, yet semi-arid lands in west Texas.

Time for Dry Farming Has Come.
There is nothing more mysterious or the truth that there is a time for all things, from the birth of a world from star mist, to the opening of a new corner grocery; from relying upon the spontaneous growth of nature for sustenance to intensive agriculture, and the confining farming operations to regions of abundant rainfall to extending it so as to include semi-arid districts that can be made to yield paying crops. The last mentioned condition has arrived, has been entered upon, and it is to be a permanent one. Its coming was delayed so long as rich lands in humid areas could be had for nothing, or at small cost, and while any man of moderate means could take a comfortable acreage as he desired in semi-arid localities and irrigate it. That area has passed in many sections, and is drifting by like a shadow on a dial in others, where the day has come when the subsoil, when benevolence must turn their attention to laying hold of and extracting for themselves and their followers, by dry farming, the untold agricultural wealth that lies locked in the prolific soils of the semi-arid regions, and has so long awaited this "open sesame" to pour out its abundance.

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open and unobstructed that leads to the time when Texas, from border to border, will reach the exception of a spot here and there) be checked with thirty farmers.

On a Small Rainfall.
P. H. Linfield, director of the Montana agricultural station, says: "In answer to the question as to the crop possibilities with 12.14 inches annual precipitation, I would say that, could it all be utilized for crop growth, 32.5 bushels of what per acre could be grown, if only half the total moisture of a year could be retained, 16 bushels, a very paying crop, could be raised."

According to bulletin No. 61 of the New Mexico College of Agriculture and Mechanic Arts, 12 inches of rainfall annually are sufficient (if all could be conserved) to raise 27 bushels of grain to the acre. The bulletin then continues: "If only half is kept in the soil there is a possibility of more than 13 bushels to the acre, which is a very profitable yield. By the employment of proper methods of tillage, 10 inches, or considerably less, may be so conserved in the soil as to yield good crops."

Bulletin No. 75 of the experiment station of the Agricultural College of Utah, says: "Twelve inches of rainfall should produce in Utah, conditions being favorable for the retention of moisture in the soil, not less than 15 bushels of wheat to the acre; 14.50 inches should produce 20 bushels; 19 inches, 25 bushels, and so on."

The annual precipitation over the greater portion of semi-arid Texas is much greater than in Montana, New Mexico, Utah and other dry farming states, and away above the 10 inches that the New Mexico and Utah bulletins say profitable crops can be raised on.

Texan Rainfall Figures.
At Eagle Pass and Fort Duncan the annual precipitation was 27.26 inches in 1905; 24.65 inches in 1906; 19.35 inches in 1907; and 15.58 inches in 1908; and the mean annual rainfall over 35 years has been 20.87 inches.

The annual rainfall of Laredo and Fort McIntosh was 28.01 inches in 1905; 21.19 inches in 1906; 16.47 inches in 1907; and 19.08 inches in 1908; and the mean annual rainfall during 35 years has been 19.67 inches.

The annual rainfall at Fort Clark and Brackettville was 24.33 inches in 1905; 19.68 inches in 1906; 23.43 inches in 1907; and 18.08 inches in 1908; and the mean annual rainfall during 35 years has been 22.52 inches.

The annual rainfall at Big Springs was 29.88 inches in 1905; 25.94 inches in 1906; 24.84 inches in 1907; and 24.84 inches in 1908; and the mean annual rainfall since 1891 has been 26.93 inches.

These figures illustrate the differences in favor of Texas through the whole extent of its area in which it is proposed to conduct dry farming. To succeed on the farm in west Texas, in the first place, the soil of the farm should be deep and rich. The location selected should be such as to afford adequate transportation facilities for obtaining supplies and marketing products. The right kind of implements and machinery should be procured and properly used, the main ones being the following, or others that will take their place. Subsoil, surface packer, roller, hoe, drill or seeder, disc surface cultivator, acre harrow, toothed harrow, reeder, harvester and thrasher. The most approved methods of plowing, harrowing, planting and cultivating should be followed, not neglecting to break the land deep in the fall and winter and immediately go over it with the disc harrow, as the heaviest rainfalls occur in those seasons and they are the best for the moisture to penetrate deep into the ground. Less seed should be planted than is customary in humid regions. Cultivation should be shallow and frequent and a good mulch maintained.

How to Grow Water.
An authority says: "Soil moisture, by proper handling may be moved from one layer of soil to another. By loosening the lower layers of the soil the tendency of the water to be downward during the rainy season, but should the farmer desire to bring a portion of that moisture quickly to the surface in order, for example, to cause the speedy germination of seed, he can do so by backing the surface soil, or by upward movement may be checked by again forming loose surface."

Every drop of water that falls should be caught and held as long as possible and made to do as much work as possible.

Forage Crops and Stock.
Stock raising should constitute, not a subsidiary, but permanent incident of dry farming, and of all other farming in west Texas. The best action can be made to yield immense forage crops by intensive farming, and these should be raised and fed to all kinds of profitable livestock of the best breeds, including poultry. Wherever feasible dairying should be practiced, on a commercial scale. Where it can be done, cotton should be raised as a money crop. Other crops should be such as will, as nearly as possible, supply the food required by the family and help, and should embrace all vegetables, fruits and other products that can be grown to advantage under prevailing soil and climatic conditions.

and is grown in that country at present. It is also grown in other European countries. Perhaps more is grown in Russia than any other country. All our best seed is obtained from that country. The average production of emmer in Russia is about 16,000,000 bushels annually. The annual rainfall in the sections that grow the best crops of emmer are between 15 and 17 inches less than southwest Texas.

Emmer Resists Drouth.
The United States department of agriculture introduced emmer in South Dakota in 1890, and on the college farm it yielded 43 bushels per acre. Prof. J. A. Shepperd, who had charge of this experiment, says that the results from the family and help, and should embrace all vegetables, fruits and other products that can be grown to advantage under prevailing soil and climatic conditions.

I would urge every farmer to try some of these crops on a small plot.

(Continued on Next Page.)

Feed and Management Of Pigs Preparatory To Marketing

AFTER having given a brief outline of the best breeds of hogs and the management of boars and sows, it is the purpose now to deal with the feeding, management and finishing of the growing pig. Farmers often get in a hurry and wean pigs too early, at six weeks sometimes, and as a result, unless they are well supplied with milk, they are hopelessly stunted. Eight weeks should be the minimum age for weaning, and 10 or 12 weeks is better still if the sow is not to have a season's litter or in case there is time enough to wean.

Sow's Digestion.
The sow has a strong digestion and can turn coarse grain and pasture into easily digested milk, consequently, the cheapest way to increase the weight of young pigs is through the sow. Her feed should be selected to produce a high milk yield, and the pigs should be allowed to run with her until able to get the nourishment they require from grain and pasture. About three weeks after they are born, the pigs will begin to nibble at feed, and at this age they should have milk given them in a trough besides what they get from their mother. When they have learned to drink the milk freely, add cracked barley, wheat, peas, milo make, or corn in small quantities. Feed only what they will eat at one time and keep the trough clean.

Cutting Down Sow's Feed.
The hours should be castrated before weaning. Before weaning the pigs, cut down the sow's supply of food to alfalfa hay and water, so that she may dry up without danger to her. If the pigs are taken from her suddenly when she has a large supply of milk, her udder may be ruined so that she becomes unable to suckle another litter.

The pigs should be fed three to five times a day when first weaned, for, since they took their food at least every two hours while with their mother, a too sudden change is bad. After they are growing vigorously the meals may be reduced to two a day, and when they weigh 75 pounds and are on pasture, feed only once a day.

Your complexion as well as your temper is rendered miserable by a disordered liver. By taking Chamberlain's Stomach and Liver Tablets you can improve both. Sold by all druggists.

ture, feed once a day and that at night.

Skim Milk Good.
Feeding skim milk at weaning time makes the change from the mother's milk easier. Since butter fat is worth \$400 to \$500 a ton, feeding whole milk makes it expensive pig feed. Tankage may be used to take the place of milk when made available. A fifth of the weight of the grain fed. Feeding a mixture of at least two of the following will give the pigs a variety and result in larger and cheaper gains than will any single feed. Peas, barley, wheat, rye, milo make, corn, peas, alfalfa, burr clover, etc.

Do not allow the feed to become sour when making it and keep all troughs and pails clean. Some grain should be fed, for it is not profitable to keep growing pigs on pasture alone. Half the weight of a 200 pound pig should be made from pasture. Alfalfa is the best pasture without doubt, followed by rape, clover, and a mixture of wheat, oats and barley. Every day should see a regular gain in the growing pig, made with the least feed of grain possible and the largest profitable amount of forage. It is not advisable to water directly from a stream because it often carries disease, but fresh water must always be before them. A warm, dry, clean shelter, free from draft is necessary, and one that will provide shade during the heat of the day.

Preparing for Market.
When the pig is almost ready for market it should be confined in limited quarters and fed heavily on grain for from 60 to 75 days. Hogs make the greatest gains when they are allowed just enough exercise to keep their appetites sharp. They should be divided into lots of even size and not more than 25 allowed per half acre. Brood sows should not be kept with fattening hogs. Feed for three times a day at regular hours and give just a little less than they will eat up clean. The greatest profits result from inducing the hogs to eat large quantities of grain and maintain a good appetite. Watching them as they eat will indicate whether they are over feeding or whether they clean up the feed quickly and need more. Feeding the hogs on foods rich in protein makes them thirsty, so water should be plentiful.

Before being marketed, the hog should be well fattened, smooth and well rounded, firm and solid to the touch. They should be graded to an even size and weight and then shipped.